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ARIZONA STATE UNIVERSITY ■ COLLEGE OF BUSINESS
CENTER FOR BUSINESS RESEARCH

Arizona Population Projections

Agencies' Forecasts Vary Greatly

Will 5.6 million people live in Arizona at the end of the century - or "only" 4.4 million? Other choices include a population of 4.7 million or 4.9 million. Each figure represents a population forecast produced by a respected agency.

Such large differences - 1.2 million people is more than one-third of the 1985 population of 3.23 million - have substantial implications for resource and service planning and for quality-of-life concerns. So which forecast is most likely?

ARIZONA FORECAST

The projection of 5.6 million residents in the year 2000 should be discarded. Produced three years ago by the U.S. Bureau of the Census, it relies on a simple extrapolation of population growth and migration patterns during the 1970s. Forecasters did not consider likely changes in demographic and economic conditions, nor did they have access to information revealing abrupt shifts in migration patterns during the 1980s.

The next highest prediction, 4.9 million residents, is the State's official population forecast produced by the Arizona Department of Economic Security (DES). It includes a slightly greater net natural increase between 1980 and 2000 (an average of 30,000 people per year) than occurred during the 1970s (an annual average of 23,000 people). As the number of women of child-bearing age grew during the 1970s, the difference between the number of births and the number of deaths also increased. The gap will narrow slightly through the 1990s, however, as the number of women in this age group declines.

The DES forecast also assumes a jump in net migration to Arizona

See "Population," page 2

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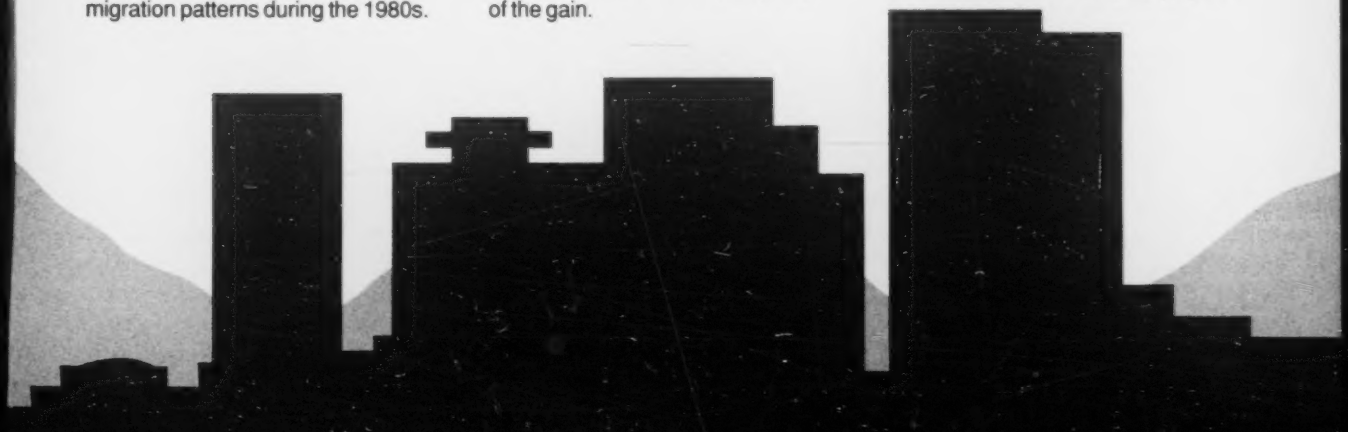
Record Population Gains Continue

For the third consecutive fiscal year (July 1 to June 30), Arizona and Maricopa County population gains set records in 1986 (see Figure I). Arizona's population reached approximately 3.38 million on June 30, 1986, an increase of 146,000 people since July 1, 1985. Net migration accounted for most (115,000) of the gain.

Maricopa County's population topped 1.9 million during June 1986, an increase of 88,000 from June 1985. The October 1985 special census count - 1,837,956 people - was less than 3,000 more county residents than predicted from the Center's population model.

See "More People," page 2



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during the 1990s. However, as discussed in the March 1986 *Arizona Business*, demographic changes suggest a decline in migration during the next decade.

Net migration to Arizona averaged 71,000 people per year during the 1970s. Despite record inflows in each of the last three years, average annual net migration during the 1980s - 76,000 people - has not been substantially higher than during the 1970s; two recessions between 1980 and 1982 reduced the gains of the early 1980s. Net migration to Arizona is highly cyclical, so the higher flows between 1984 and 1986 do not represent a trend; in fact, little trend exists in the 1971-86 data (see Figure I). Yet the DES forecast assumes an annual average net migration of 83,000 people from 1986 through 2000.

The 4.7-million-resident forecast, produced by the National Planning Association in 1985, is based on both demographic and economic projections. Assuming the same net natural increase of 30,000 people per year, this forecast infers an annual average net migration of 67,000 people from 1980 through 2000. If the current boom in net migration - projected at more than 100,000 people per year from 1984 through 1987 - lasts much longer, such an average might be feasible, even with inevitable economic downturns and demographic changes during the 1990s.

In 1985, the U.S. Bureau of Economic Analysis produced the lowest forecast - 4.4 million Arizonans at the end of the century. Based primarily on economic projections, this outlook assumes a substantial decline in net migration to Arizona during the 1990s.

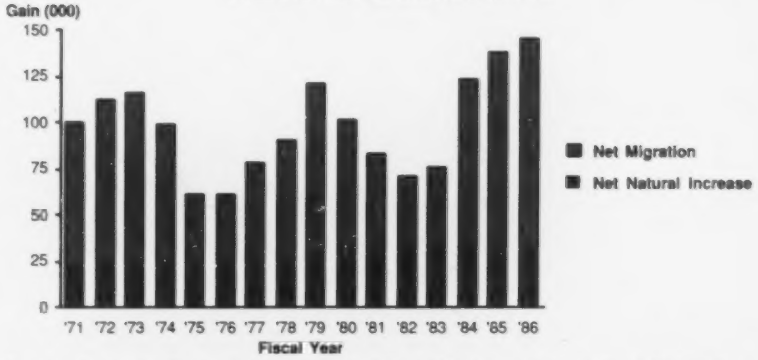
An addition of approximately 1.4 million people to the state's population between 1985 and 2000 seems likely, for a total resident count between 4.6 and 4.7 million. This estimate implies only a modest decline in net migration, to an average of approximately 64,000 people per year.

OTHER STATES

The problem of divergence among the population forecasts of three national agencies is not unique to Arizona. It is even greater for several other states, including Texas and Florida, and is clearly regional in nature. Such large discrepancies (Figure II) reflect the changes in migration patterns of the 1980s.

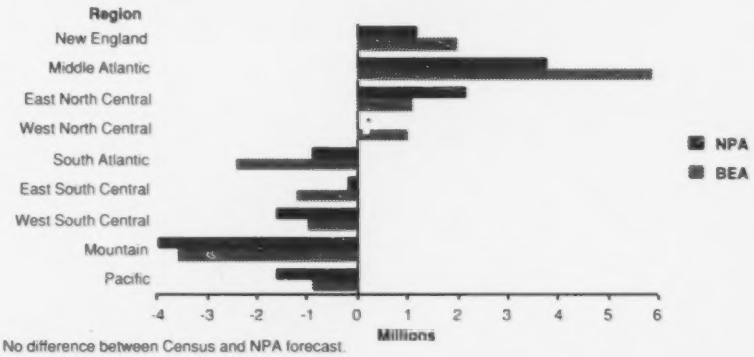
– **Tom R. Rex**
Research Manager

FIGURE I
ARIZONA POPULATION CHANGE



Source: Center for Business Research, College of Business, Arizona State University

FIGURE II
NPA AND BEA POPULATION FORECASTS FOR THE YEAR 2000: DIFFERENCE FROM U.S. BUREAU OF THE CENSUS FORECAST



* No difference between Census and NPA forecast.

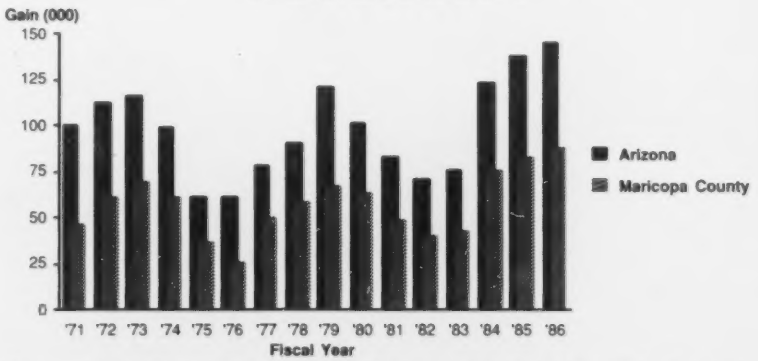
Sources: U.S. Bureau of the Census, National Planning Association (NPA), and U.S. Bureau of Economic Analysis (BEA).

"More People," from page 1

Since net migration to Arizona generally does not peak until just prior to the onset of a national economic downturn, population gains during 1986-87 may again set records.

– **Tom R. Rex**
Research Manager

FIGURE I
ANNUAL POPULATION GAIN



Source: Arizona Department of Economic Security (1970-79) and Center for Business Research, College of Business, Arizona State University (1980-86).

Valley Inflation Remains Minimal

Inflation in the Phoenix metropolitan area was minimal during second quarter 1986, the fourth consecutive quarter of little or no change in prices of goods and services. A 0.5 percent advance brought the index to 192.6 (1977 = 100). On a seasonally adjusted basis, the gain was only 0.4 percent, following slight deflation in the first quarter (Table 1).

Compared to second quarter 1985, the index rose only 0.9 percent. Since the Metropolitan Phoenix CPI began in 1975, it has measured lower inflation only briefly at the end of the 1982 recession.

The annual inflation rate has steadily declined since second quarter 1985, when it peaked at 6.0 percent. During this period, inflation in the Phoenix area has swung from faster to slower than the national average.

TABLE 1
PERCENT CHANGES IN
METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter					
Expenditure Category	*Relative Importance*	*1st 1985*	*2nd 1985*	*3rd 1985*	*4th 1985*	*1st 1986*	*2nd 1986*
ALL ITEMS	100.0	1.6	1.3	0.3	0.6	-0.2	0.4
Food and Beverages	18.7	1.6	0.9	-0.1	2.3	0.5	1.0
Housing	39.5	1.2	0.6	1.8	-0.4	0.7	0.2
Apparel and Upkeep	4.8	1.8	3.3	-1.9	2.5	-3.3	5.6
Transportation	21.2	2.0	2.0	-2.1	-0.6	-2.5	-1.9
Medical Care	6.9	2.6	2.7	1.6	1.8	1.3	1.7
Entertainment	4.6	2.9	3.5	2.1	5.3	-1.7	2.4
Other Goods and Services	4.3	1.7	1.7	-0.2	1.2	1.7	0.7

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Second Quarter 1986

	Index (1977=100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter **	*Year-Ago Quarter*
ALL ITEMS	191.6	192.6	0.4	0.9
Food and Beverages	176.5	178.3	1.0	3.6
Food	176.8	178.5	0.9	3.2
Food at Home	174.7	175.2	0.5	2.7
Cereal and Bakery Products	194.5	197.8	1.5	6.1
Meats, Poultry, Fish, and Egg	158.9	156.3	-0.5	-1.0
Dairy Products	162.9	162.2	-0.6	1.3
Fruits and Vegetables	186.9	190.0	0.5	0.5
Other Food at Home	168.8	170.9	1.8	7.1
Food Away from Home	178.1	181.9	1.5	4.0
Housing	200.3	202.2	0.2	2.3
Shelter	217.2	218.1	0.5	3.5
Renters' Costs**	116.6	116.4	-0.3	1.8
Homeowners' Costs**	109.5	110.4	0.8	4.2
Fuel and Other Utilities	164.2	172.2	0.1	-2.1
Gas (piped) and Electricity	174.1	188.7	0.4	-3.6
Household Furnishings/Operations	154.5	153.6	-0.8	1.9
Apparel and Upkeep	144.0	151.7	5.6	2.6
Transportation	180.9	178.2	-1.9	-7.1
Private Transportation	178.0	175.0	-2.2	-7.6
New and Used Cars	190.0	191.0	1.3	-1.6
Motor Fuels	173.6	154.9	-15.7	-28.2
Public Transportation	227.8	230.3	1.5	-1.0
Medical Care	266.8	267.4	1.7	6.4
Entertainment	197.1	195.1	2.4	8.1
Other Goods and Services	175.9	177.1	0.7	3.3

*Seasonally adjusted **Base period is second quarter 1983.

Source (Tables 1 and 2): Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

COMPONENT INDEXES

For the fourth consecutive quarter, declining gasoline prices were the greatest, but not the only, factor causing the near absence of inflation in the Phoenix area. Inflation moderated in all major categories of the CPI. Between second quarter 1985 and second quarter 1986, the annual inflation rate dropped from 4.8 to 2.3 percent for housing, from 4.9 to 3.6 percent for food and beverages, from 10.8 to 6.4 percent for medical care and from 8.2 to -7.1 percent for transportation.

Food and Beverages

Price increases for food and beverages remained moderate during the second quarter, rising 1.0 percent (seasonally adjusted). Grocery store food increases were smaller, 0.5 percent, but the cost of restaurant meals climbed 1.5 percent and prices of alcoholic beverages shot up 2.8 percent.

Within the food at home category, wide variation in price changes continued (see Table 2). Prices of cereal and bakery products and of other food at home once again gained moderately, while prices of dairy products and of meats, poultry, fish and eggs declined. Compared to second quarter 1985, price changes ranged from -1.0 percent for the meats group to 7.1 percent for other food at home.

Housing

With most subcategories exhibiting little change, housing costs barely rose during the second quarter. Apartment rents recorded a rare decline, following two quarters of slight advances. High vacancy rates could hold rental increases to minimal amounts for several more quarters.

Prices of fuel and other utilities were nearly flat, following two successive declines. Natural gas rates dropped for the seventh consecutive quarter.

After a large gain last quarter, the index for household furnishings and operations fell. Contributing to the decline were lower prices of textile

home furnishings; furniture; television, radio and sound equipment; and other household equipment.

Transportation

Led by falling gasoline prices, transportation costs dropped 1.9 percent, the fourth consecutive quarterly decline. Coupled with reductions of previous quarters, the 15.7 percent plunge in gasoline prices placed them 28.2 percent lower than they were in second quarter 1985.

In the three previous quarters, the indexes of several other transportation subcategories fell, but only vehicle finance charges dropped during the second quarter; the decline since second quarter 1985 totaled 6.6 percent. Despite increases in the second quarter, the indexes of several subcategories remained lower than they were one year before: used cars, vehicle maintenance and repair, and public transportation.

Medical Care and Other Categories

Medical care inflation remained in the range of 1.3 to 1.8 percent per quarter for the fourth straight quarter after a string of advances of 2 percent or more. Annual increases in all subgroups were back into single digits; health insurance premiums were just 3.6 percent higher than they were one year earlier.

Apparel costs continued to fluctuate from quarter to quarter, up sharply in the second quarter, following a large drop in the first quarter. Entertainment costs again rose more rapidly than the prices of most other items.

COMPARISON AREAS

Although slight, the second quarter inflation rate in the Phoenix area was greater than the national average (see Table 3). Advances in the Valley exceeded the national average in all major categories except medical care and entertainment.

Compared to one year earlier, the Phoenix inflation rate was again less than the national average. While increases in the apparel and upkeep and the entertainment categories were greater in the Valley than in each comparison area, the opposite was true of the transportation and the other goods and services categories.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
Second Quarter 1986

	Percent Change from Last Quarter*		Percent Change from One Year Ago			
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*	*Denver*	*San Diego*
ALL ITEMS	0.5	-0.4	0.9	1.6	0.0	2.9
Food and Beverages	1.0	0.6	3.6	2.8	-0.4	3.9
Housing	1.0	0.6	2.3	2.9	1.6	5.6
Apparel and Upkeep	5.3	1.1	2.6	0.5	-1.9	0.6
Transportation	-1.5	-4.2	-7.1	-4.9	-6.7	-4.0
Medical Care	0.2	1.8	6.4	7.6	8.9	5.9
Entertainment	-1.0	0.3	8.1	3.5	0.9	4.4
Other Goods and Services	0.7	0.5	3.3	6.1	5.7	4.3

*Not seasonally adjusted

Source: Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data are from the U.S. Department of Labor, Bureau of Labor Statistics.

OUTLOOK

With oil prices and interest rates stabilizing, the best inflation news already has been reported. An immediate return to the higher inflation experienced between mid-1983 and mid-1985 is not likely, however. In fact, the Phoenix area may experience one more quarter of inflation comparable to that of the four prior quarters, before the rate of increase gradually accelerates.

Inflation in most major cagegories probably will remain stable or accelerate slightly through 1987. However, after one more quarter of moderate gains, medical care inflation could accelerate. Inflation in the transportation category is virtually certain to return, but perhaps not for one more quarter. With gasoline prices still falling at the beginning of the third quarter, a fifth straight quarter of deflation in transportation prices may occur.

The result should be a 1986 annual average inflation rate of 1.5 percent, down from 5.0 percent in 1985 and 5.8 percent in 1984. Since the 1986 annual average nationally probably will be near 2 percent, the Valley's higher inflation of the past two years likely will be reversed.

By the end of 1987, Phoenix area inflation probably will rise to a year-over-year rate of 5 percent, resulting in an annual average of approximately 4 percent. The national average probably will be similar. Caution should be exercised, however: Unexpected "shocks," as occurred during 1983 and 1984 – a 48 percent surge in health insurance premiums and a 21 percent jump in used car prices, for example – could quickly drive the Valley's inflation rate back to 6 percent.

— Tom R. Rex
Research Manager

Construction Activity Surges in First Quarter

After a disappointing fourth quarter, construction activity in Arizona demonstrated strong improvement during the initial quarter of 1986. Building permits valued at $1.4 billion (27,387 permits) were issued, in contrast to $1.1 billion (23,716 permits) for fourth quarter 1985. As shown in the accompanying tables, the single family, hotel/motel, retail, and office building sectors led the resurgence.

Maricopa County continued to be the primary location of building activity, with 17,083 permits, valued at $1 billion – 71 percent of the total. This level of activity is comparable to that of first quarter 1985 (17,039 permits worth $1 billion), but it is well above that of fourth quarter 1985 (13,525 permits, worth $795 million).

With 4,255 permits valued at $215 million, Pima County registered even greater improvement over the fourth quarter (4,019 permits, worth $130 million), rising to a level similar to that of one year earlier (4,212 permits, worth $202 million). Table 4 presents the 12 most active reporting units, based on total dollar value, which represent 86 percent ($1.2 billion) of all Arizona construction activity for the first quarter.

SECTORAL ACTIVITY

Residential

Unlike prior recoveries, the current upturn has not featured the single family sector in a leading role. Lower interest rates, coupled with stable housing prices, sparked improvement in housing affordability during 1985. Even though the level of response has not been as strong as expected, the state's first quarter 1986 total of 8,414 permits provides evidence that this sector finally may be responding to the improved market environment.

Maricopa County recorded a first quarter increase of 42 percent over the fourth quarter building permit level (4,260 to 6,057 permits). While a significant advance, the first quarter level of activity was still below the quarterly levels of 1985. Showing greater activity than one year earlier were areas such as Gilbert (89 to 198 permits), Glendale (353 to 525 permits), and unincorporated Maricopa County (804 to 930 permits).

Pima County's pattern was similar, with a 15 percent rise in the first quarter over the fourth quarter (875 to 1,002 permits), still well below the other 1985 quarterly levels. Most of the single family homes were permitted in unincorporated Pima County (793 permits) rather than in the city of Tucson (190 permits).

The rest of Arizona followed the same pattern, with only a 6 percent increase over the fourth quarter (1,277 to 1,355 permits). Leading areas included Flagstaff (78 permits), unincorporated Cochise County (70 permits), Prescott (66 permits), and Yuma (74 permits).

Commercial

The most significant area of commercial development during the first quarter was the hotel/motel sector, with 22 permits (4,000 rooms), valued at $129 million. This activity level already exceeds the $113 million (69 permits for 4,000 rooms) recorded for all of 1985. Hotel/motel development occurred in Phoenix (4 permits, worth $69 million, for 2,100 rooms), Tucson (5 permits, worth

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(First Quarter 1986, Fourth Quarter 1985, and First Quarter 1985)

	SINGLE FAMILY		COMMERCIAL						INDUSTRIAL	
			APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]			
Maricopa County	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
First Quarter 1986	6,057	399,130,852	335	135,721,459	87	81,706,773	257	69,653,584	77	50,455,191
Fourth Quarter 1985	4,260	303,592,384	329	141,572,487	108	48,711,474	225	48,644,558	151	66,749,258
First Quarter 1985	6,277	408,567,268	438	215,821,238	94	76,507,122	227	62,974,489	151	90,747,607
Pima County										
First Quarter 1986	1,002	64,258,025	58	20,584,545	39	40,970,882	25	13,405,343	9	1,087,500
Fourth Quarter 1985	875	55,767,139	30	14,409,024	35	17,069,004	13	2,446,336	22	5,906,875
First Quarter 1985	1,019	57,912,007	87	50,689,954	26	26,798,312	25	10,785,360	27	8,599,202
Rest of Arizona										
First Quarter 1986	1,355	68,746,450	54	17,673,242	35	2,370,188	66	6,634,873	26	2,503,567
Fourth Quarter 1985	1,277	64,986,560	41	12,473,654	32	5,146,440	63	7,319,401	11	2,554,536
First Quarter 1985	1,257	59,182,724	34	13,449,337	34	1,918,514	69	9,331,777	35	2,381,128
Arizona Total										
First Quarter 1986	8,414	532,135,327	447	173,979,246	161	125,047,843	348	89,693,800	112	54,046,258
Fourth Quarter 1985	6,412	424,346,083	400	168,455,165	175	70,926,918	311	58,410,295	184	75,210,669
First Quarter 1985	8,553	525,661,999	559	279,960,529	154	105,223,948	321	83,091,626	213	101,727,937

[a] Five or more housing units

[b] Office, bank, medical and professional buildings

[c] Shopping centers and other mercantile buildings

Source: Center for Business Research, College of Business, Arizona State University

$28 million, for 790 rooms), and Scottsdale (1 permit, worth $14 million, for 380 rooms).

Retail activity improved again in the metropolitan areas but declined in the non-metropolitan areas. This development pattern is in response both to growing economies and to new single family subdivisions. Maricopa County issued a near record $70 million in building permits, while Pima County's permits were valued at $13 million, well above the quarterly activity of one year earlier.

Even with much publicized concern about the office building sector, a total of 81 permits, valued at $82 million, were issued during the first quarter in Maricopa County. Primary areas of development were Phoenix (31 permits at $54 million) and Scottsdale (15 permits at $12 million). While strong, this level of activity is still well below the record 1985 levels of $168 million for the second quarter and $91 million for the third quarter. Pima County recorded 39 office building permits, valued at $41 million; one permit accounted for $21 million of the total.

Multifamily housing development, which had been a leading sector for the last two years, continued to decline. Although the number of first quarter permits increased in Maricopa County over the fourth quarter (329 to 335 permits), the number of authorized units declined from 5,728 to 4,908 for the same period. Still, the dollar value remained fairly stable at $136 million. This situation reflects the development of larger units with more amenities in order to be more competitive with other projects as well as with the growing single family market.

In Pima County, the number of authorized units increased from the fourth quarter (664 to 854 units), with 763 units permitted in Tucson. The multifamily sector also improved in the non-metropolitan counties, moving from 513 units in the fourth quarter to 924 units in the first quarter. Leading areas of development were Yuma (304 units), Sierra Vista (372 units), and Flagstaff (84 units).

TABLE 2
ARIZONA HOUSING UNITS AUTHORIZED
First Quarter 1986

	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total*
APACHE COUNTY	12	8	0	0	0	20
Percent Change, Previous Year	-58	300	0	–	–	-60
Percent Change, Previous Qtr.	-39	14	0	–	–	-25
COCHISE COUNTY	143	121	0	24	383	671
Percent Change, Previous Year	88	68	–	500	-15	10
Percent Change, Previous Qtr.	74	95	–	200	7,559	327
COCONINO COUNTY	147	65	12	0	84	308
Percent Change, Previous Year	24	20	500	0	-29	4
Percent Change, Previous Qtr.	26	-20	-50	–	500	28
GILA COUNTY	52	55	0	0	0	107
Percent Change, Previous Year	23	41	0	–	0	25
Percent Change, Previous Qtr.	0	17	0	0	0	8
GRAHAM COUNTY	13	44	0	0	0	57
Percent Change, Previous Year	-7	2	0	0	0	0
Percent Change, Previous Qtr.	-38	4	0	0	0	-9
GREENLEE COUNTY	1	0	0	0	0	1
Percent Change, Previous Year	–	–	0	0	0	0
Percent Change, Previous Qtr.	0	–	0	0	0	-50
LA PAZ COUNTY	45	234	0	0	0	279
Percent Change, Previous Year	542	631	–	–	–	615
Percent Change, Previous Qtr.	800	835	–	–	–	829
MARICOPA COUNTY	6,057	445	90	350	4,908	11,850
Percent Change, Previous Year	-3	-11	-48	-14	-41	-24
Percent Change, Previous Qtr.	42	-46	-60	24	-14	4
MOHAVE COUNTY	252	356	2	8	0	618
Percent Change, Previous Year	-8	-35	–	-66	–	-34
Percent Change, Previous Qtr.	5	-31	–	–	–	-21
NAVAJO COUNTY	68	26	0	0	0	94
Percent Change, Previous Year	30	-59	–	–	–	-18
Percent Change, Previous Qtr.	-10	-59	–	–	–	-33
PIMA COUNTY	1,002	516	34	11	854	2,417
Percent Change, Previous Year	-1	4	-51	-44	-59	-34
Percent Change, Previous Qtr.	14	10	-34	-21	28	16
PINAL COUNTY	124	273	4	10	63	474
Percent Change, Previous Year	2	18	-90	150	10	4
Percent Change, Previous Qtr.	-15	5	–	-44	293	7
SANTA CRUZ COUNTY	31	42	0	0	0	73
Percent Change, Previous Year	121	-10	–	–	–	8
Percent Change, Previous Qtr.	14	2	–	–	–	-7
YAVAPAI COUNTY	344	186	12	41	90	673
Percent Change, Previous Year	-16	-21	-39	-10	350	-8
Percent Change, Previous Qtr.	-9	-19	500	57	650	3
YUMA COUNTY	123	180	4	7	304	618
Percent Change, Previous Year	25	-23	–	-36	2,433	73
Percent Change, Previous Qtr.	11	-1	0	16	-29	-16
TOTAL, ARIZONA	8,414	2,551	158	451	6,666	18,260
Percent Change, Previous Year	-1	-1	-45	-14	-40	-21
Percent Change, Previous Qtr.	31	-10	-45	25	-3	8

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

Industrial

Industrial activity declined as expected because last year's building was dominated by single, large-user projects. Only $50 million in new industrial projects were permitted in Maricopa County for the initial quarter of 1986, in contrast to $67 million for the fourth quarter and $91 million for first quarter 1985. Leading areas of activity continued to be Phoenix (38 permits at $19 million) and Tempe (9 permits at $8 million), but Chandler (8 permits at $6 million) and Tolleson (2 permits at $11 million) reported stronger-than-typical levels of activity.

Industrial development continued to decline in Pima County, where only 9 permits, valued at $1 million, were issued in the first quarter - the lowest level reported in the last year. For the rest of Arizona, the number of permits increased from the fourth quarter (11 to 26 permits), while dollar value remained stable at $2.5 million. Areas of development include Sierra Vista (5 permits at $500,000), Eloy (1 permit for $400,000) and Lake Havasu City (3 permits at $500,000).

Other

This construction sector encompasses a diverse set of development projects such as schools,

TABLE 3
ARIZONA BUILDING PERMITS
First Quarter 1986

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
APACHE COUNTY	26	854,582	3	40,000	0	0	6	1,210,912	35	2,105,494
Percent Change, Previous Year	-34	-37	-25	-21	0	0	0	–	-29	48
Percent Change, Previous Qtr.	-21	-28	-57	-90	0	0	100	7972	-18	29
COCHISE COUNTY	416	9,875,425	50	9,247,860	8	860,880	177	2,190,513	651	22,174,678
Percent Change, Previous Year	67	108	212	-18	300	209	-35	-14	20	17
Percent Change, Previous Qtr.	59	68	138	64	166	-45	-2	23	39	49
COCONINO COUNTY	308	10,119,346	25	2,769,647	6	347,761	99	1,038,914	438	14,275,668
Percent Change, Previous Year	40	37	-10	-53	200	4	26	-60	33	-12
Percent Change, Previous Qtr.	-14	13	66	165	–	–	16	-33	-4	23
GILA COUNTY	169	3,773,363	8	687,100	2	46,000	30	211,960	209	4,718,423
Percent Change, Previous Year	2	26	300	223	-50	-62	25	39	7	35
Percent Change, Previous Qtr.	-6	5	100	219	–	–	-28	-71	-7	4
GRAHAM COUNTY	86	1,460,064	5	16,300	0	0	21	3,313,770	112	4,790,134
Percent Change, Previous Year	-13	21	0	-76	–	–	-15	–	-15	256
Percent Change, Previous Qtr.	-13	-14	-44	-86	0	0	109	–	-5	160
GREENLEE COUNTY	2	5,000	0	0	0	0	0	0	2	5,000
Percent Change, Previous Year	-59	-89	0	0	0	0	0	0	-59	-89
Percent Change, Previous Qtr.	-50	-81	0	0	0	0	0	0	-50	-81
LA PAZ COUNTY	309	2,169,174	3	98,194	1	1,300	46	266,219	359	2,534,887
Percent Change, Previous Year	382	87	-57	-84	0	-95	-31	-27	158	16
Percent Change, Previous Qtr.	432	146	-57	-16	–	–	-47	-29	134	83
MARICOPA COUNTY	8,615	420,829,340	956	409,065,077	77	50,455,191	7,435	167,989,389	17,083	1,048,338,997
Percent Change, Previous Year	-1	-2	-1	4	-49	-44	3	39	0	1
Percent Change, Previous Qtr.	22	29	11	44	-49	-24	35	39	26	31
MOHAVE COUNTY	986	17,714,533	28	1,427,763	3	560,294	483	2,012,037	1,498	21,714,627
Percent Change, Previous Year	-13	4	-61	-82	50	471	-16	-21	-16	-21
Percent Change, Previous Qtr.	-8	14	-36	-30	200	1597	41	-4	2	10
NAVAJO COUNTY	177	3,649,369	7	321,671	3	83,412	48	392,600	235	4,447,052
Percent Change, Previous Year	1	43	-12	-85	–	–	77	-24	12	-15
Percent Change, Previous Qtr.	-4	4	-41	-27	200	96	11	-71	-2	-16
PIMA COUNTY	2,514	70,062,702	137	108,763,393	9	1,087,500	1,596	35,192,191	4,256	215,105,786
Percent Change, Previous Year	8	7	-12	5	-66	-87	-7	37	1	6
Percent Change, Previous Qtr.	5	12	21	186	-59	-81	7	48	5	65
PINAL COUNTY	512	9,068,072	20	3,534,575	1	400,000	280	2,597,407	813	15,600,054
Percent Change, Previous Year	9	13	-16	114	-75	230	20	78	11	38
Percent Change, Previous Qtr.	0	-17	-16	0	–	–	-44	-50	-21	-20
SANTA CRUZ COUNTY	84	1,442,480	1	1,000	0	0	3	79,582	88	1,523,062
Percent Change, Previous Year	21	59	-50	-99	0	0	-79	-74	2	11
Percent Change, Previous Qtr.	13	-13	-66	-99	0	0	-69	-21	1	-24
YAVAPAI COUNTY	707	22,201,910	52	5,472,867	0	0	218	2,314,400	977	29,989,177
Percent Change, Previous Year	-11	-7	13	43	–	–	-5	-62	-9	-13
Percent Change, Previous Qtr.	-13	-11	57	55	–	–	6	12	-7	-2
YUMA COUNTY	413	12,087,786	34	10,396,621	2	203,920	187	2,239,185	636	24,927,512
Percent Change, Previous Year	-6	11	21	163	-83	-77	20	68	0	46
Percent Change, Previous Qtr.	-2	11	-35	-15	-50	-70	7	-25	-3	-7
TOTAL, ARIZONA	15,324	585,313,146	1,327	551,842,068	112	54,046,258	10,629	221,049,079	27,392	1,412,250,551
Percent Change, Previous Year	2	1	-2	3	-47	-46	0	34	0	2
Percent Change, Previous Qtr.	13	22	10	57	-39	-28	22	36	18	32

*Includes mobile homes

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

churches, and health care facilities. The building of educational facilities continued at a strong pace, with new projects valued at $37 million in areas such as unincorporated Pima County (2 permits at $2.7 million) and Phoenix (17 permits at $21 million). Health care facilities continued to be permitted at a stable level (10 permits, worth $23 million), but one permit issued in Phoenix was valued at $14 million (Phoenix General Hospital).

LOOKING AHEAD

Although 1986 began at its expected strong pace, the fundamental concern is whether the pace can be sustained. Market conditions are not especially positive for any one construction sector. If interest rates remain at their current level, the single family sector is the only one that could sustain or improve its current level of activity. Given a fairly balanced market, the industrial sector should remain at its current level of activity throughout 1986. In response to emerging residential subdivisions, the retail sector also should maintain its present level of activity for the rest of the year. Only these sectors have the potential to improve over the current quarter.

Concern about market strength is especially evident in the commercial area. For the first quarter, the hotel/motel sector set the pace, accounting for all of the growth in the com-

TABLE 4
REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS
First Quarter 1986

Reporting Unit	Value (in millions)
Phoenix	$400.9
Scottsdale	136.6
Mesa	124.6
Tucson	124.4
Unincorporated Pima County	88.5
Tempe	85.1
Unincorporated Maricopa County	79.5
Glendale	78.3
Chandler	59.8
Peoria	19.5
Unincorporated Yavapai County	17.9
Yuma	16.9

Source: Center for Business Research, College of Business, Arizona State University.

mercial area. After this record level of quarterly activity, the hotel/motel sector should appreciably slow during the remainder of the year. The office building sector had a good initial quarter, but activity should decline during the latter quarters of 1986. The multifamily sector has already begun to respond to weaker market conditions and should return to the historical pattern of less activity than the single family sector.

Because construction activity has been so good for the last few years, concern exists that the various markets are not currently strong enough to absorb all of the new building in a reasonable period of time. Hence, construction activity is expected to slow during 1986 as developers examine the current and potential strength of the market.

— **Jay Q. Butler**

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

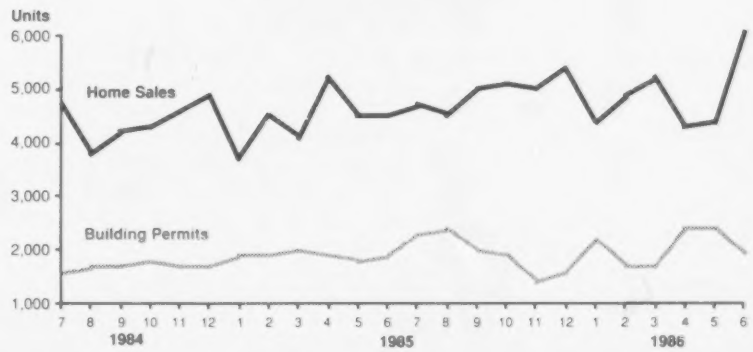
Dips in Mortgage Rates Boost Home Construction and Sales

Between April 1985 and April 1986, mortgage interest rates in the Phoenix metropolitan area fell more than three percentage points, briefly dipping below 10 percent. Nearly all of the decline occurred during three short periods: late May 1985, November and December 1985, and late February and early March 1986. After each period, an increase was measured, first in the number of building permits issued for single family homes (including townhouses), then in the number of sales of both new and existing homes.

On a seasonally adjusted basis, the number of permits for single family homes has remained in a narrow 1,600-to-2,000 band nearly every month since early 1983. However, one month after each of the three episodes of declining interest rates, the number of permits climbed into the 2,200-to-2,400 range but did not remain at the higher level for more than two months. Thus, the positive impact of falling interest rates was limited to July and August 1985 and January, April and May 1986.

While the seasonally adjusted number of home sales varies considerably more from month to month than the number of building permits issued (see Figure I), sales for most

FIGURE I
BUILDING PERMITS AND HOME SALES
Seasonally Adjusted Monthly Activity
Maricopa County



Source: Center for Business Research, College of Business, Arizona State University

months since 1984 have totaled approximately 4,500 homes. Sales never exceeded 5,000 homes in consecutive months, except following each period of declining interest rates.

Because of the time required for a buyer to select a home and to obtain financing, a higher level of real estate recordings has not begun until two-to-three months after each decline in interest rates. However, the higher level of sales has extended up to four months. More than 5,000 home sales were recorded between September and December 1985 and again in February and March 1986. The decline in interest rates at the end of February caused sales during June to set a monthly record of 6,100 homes.

— **Tom R. Rex**
Research Manager

June Purchasing Indicators Sink into Doldrums

The Arizona economy was in the doldrums in June, as performance on all economic indicators weakened. New orders received, production, and employment - key indicators - all were positive but barely so. Inventory levels of purchased materials were unchanged, and purchase commitments actually declined for the first time in more than three years. Prices increased at the greatest rate in close to two years. In short, June was not a good month.

The economy had flashed conflicting signals in May, as the economic growth rate was having difficulty picking up speed. Inventory levels decreased, following three months of accumulation. New orders increased but at a lower rate than in April. Production also was higher, but the growth rate was much smaller than in the previous month and the lowest since November. The May employment indicator, however, turned in its best performance in almost two years.

Economic growth during the first half of 1986 was much less than anticipated. If this sluggish performance continues, the long-run, moderate expansion easily could turn into a mini-recession in the second half of the year. No upturn can occur until industrial demand increases, which could be triggered by the much-anticipated decrease in interest rates by the Federal Reserve Board. Lacking such action by the Fed, the economy will continue its marginal performance, or a downward spiral may begin. Interest rates, although lower now than a few months ago, are still too high to produce the resurgence of demand needed to stimulate a resumption of growth.

Table 1 presents the results of the May and June surveys of Arizona purchasing managers. Analysis of these results follows.

MAY

Prices paid for major purchased items advanced in May at the same rate as in April. Prices had increased at a consistent rate over each of the preceding five months. While somewhat greater price advances occurred during the first half of 1986 than during the previous year, they still were well under rates for the 1983-84 period.

Delivery time on shipments from vendors lengthened at the same rate as in April. May was the eighth consecutive month of lead time stretch-out. As vendors' order books and backlogs grow, overall economic performance should continue to improve.

Inventory levels of purchased materials recorded a slight drop in May, following increases in each of the previous three months. Levels remain well under control, largely due to the better inventory management methods that Arizona firms are using. However, inventory rebuilding, often a key factor in stimulating economic growth, has contributed little to the current expansion.

New orders received by Arizona firms grew in May at a somewhat lower rate than during each of the first four months of the year. While the Arizona economy continued to enjoy a healthy new order rate, the economic expansion was still relatively moderate and was not picking up speed.

Production increased again in May but at the smallest rate since November. Production gains did not provide much stimulus to an acceleration in the economic expansion.

Employment, enjoying the largest jump since July 1984, also was strong in each preceding month of 1986.

Purchases of materials and supplies by Arizona firms gained again in May, as needed to support rising new order and production rates.

JUNE

Prices paid for major purchased items advanced again in June, at close to twice the rate of the previous month. This surge was the largest monthly increase rate since July 1984. The overall industrial inflation rate now is stepping up, as the effects of plummeting oil prices have worn off. A continuation of this inflationary trend will make it less likely that a major upward movement will occur during the second half of 1986.

Delivery time on shipments from vendors continued to lengthen in June but at half the May rate. The

Arizona Purchasing Survey

Now in its 24th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
PURCHASING SURVEYS

Percent of Purchasing Managers Indicating Each Response (Compared to Prior Month)

	May 1986			June 1986		
Key Indicators	*Higher*	*Same*	*Lower*	*Higher*	*Same*	*Lower*
Prices paid for major commodities	26	62	12	34	76	9
Delivery time from vendors	28	66	6	21	68	11
Purchased materials inventory level	25	48	27	28	44	28
New orders received	39	39	22	36	35	29
Production	30	50	20	32	38	30
Employment	28	63	9	25	56	19
Purchases	38	46	16	29	39	32

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

smallest net lead-time increase since September 1985 marked the ninth consecutive month of longer lead times. However, vendor backlogs are shrinking as the economic growth curve flattens out.

Inventory levels of purchased materials, unchanged in June following May's slight drop, have been essentially stable, with only slight ups and downs since April 1985. Inventory growth has not added fuel to the faltering economic expansion.

New orders received by Arizona firms advanced at less than half the May rate, the lowest monthly increase rate since December 1984. The growth rate steadily decreased over each of the preceding four months. No pronounced economic upturn can occur unless order receipts show new life.

Production remained almost stable in June, registering its smallest monthly increase since December 1982. Following new order receipts closely, production rates ratcheted steadily downward over the preceding three months.

Employment rose again, for the 18th consecutive month, but at a much lower rate than in May and at the lowest rate since January.

Purchases of materials and supplies by Arizona firms registered a net decrease in June, the first since this series began in March 1983. Such a decline indicates that Arizona's economic growth softened during the first half of 1986.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

GSP Growth Accelerates in First Quarter

The Arizona Gross State Product (GSP) expanded at a vigorous, inflation-adjusted 12.5 percent annual rate during first quarter 1986. The surge followed three successive quarters of relatively slow growth (see Table 1). The first quarter growth rate was comparable to that of the first quarters of 1984 and 1985, but, as in those years, it is not likely to be sustained.

Both the Arizona and national economies have grown in a saw-toothed fashion since mid-1984, with increases during the first and third quarters greater than those during the second and fourth quarters. The Arizona economy grew more than three times as fast as the national economy during the first quarter, an unusually wide difference but comparable to the spread during most of 1985. Record population gains are responsible for the relative strength of the Arizona economy.

Adjusted GSP, which excludes the volatile mining and agricultural industries, did not rise quite as much as total GSP during first quarter 1986: Agricultural GSP jumped, growing at more than a 100 percent annualized rate and reversing most of the previous quarter's sharp decline. Most sectors experienced healthy growth, but the production industries continued to have problems. Mining's GSP fell, and the advance in the manufacturing industry was slight.

1985 REVISIONS

After changes to most data used to calculate the GSP, growth during 1985 – 7.6 percent – was stronger than originally reported (6.8 percent). The fourth quarter increase rose to 3.5 percent from near zero. Further upward revision is possible when 1985 personal income data are revised in the fall.

The 1985 estimate of Gross National Product (GNP) also was revised higher, from 2.2 percent to 2.7 percent. Thus, despite considerable concern about the economy, growth was well above average in Arizona and near average nationally.

OUTLOOK

While weaknesses are apparent in the Arizona economy, such as in the manufacturing sector, GSP reveals that the overall economy remains healthy. The rate of growth during 1986 should slow from last year's 7.6 percent (the increase between first quarter 1985 and first quarter 1986 was 6.9 percent), but the Arizona economy should expand more rapidly than the 5.7 percent long-term average.

– Tom R. Rex
Research Manager

TABLE 1
ECONOMIC GROWTH

	Arizona Gross State Product				Gross National Product
Quarter	*Billions of Current Dollars, Annualized*	*Billions of 1982 Dollars, Annualized*	*Annualized Percent Change (1982 Dollars)*	*Annualized Percent Change (Adjusted GSP)**	*Annualized Percent Change (1982 Dollars)*
First 1984	$41.457	$39.520	13.1%	10.8%	9.5%
Second 1984	42.059	39.845	3.3	10.0	4.9
Third 1984	43.485	41.194	13.5	12.9	2.3
Fourth 1984	43.880	41.475	2.7	3.4	1.5
First 1985	45.712	42.786	12.7	10.7	3.0
Second 1985	46.331	43.180	3.7	6.6	2.3
Third 1985	47.433	43.970	7.3	8.8	4.1
Fourth 1985	48.055	44.358	3.5	6.1	2.1
First 1986	49.913	45.740	12.5	11.5	3.7

*The adjusted GSP is the annualized GSP in billions of 1982 dollars, minus the contributions of the agriculture and mining industries.

rRevised

Source: Center for Business Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

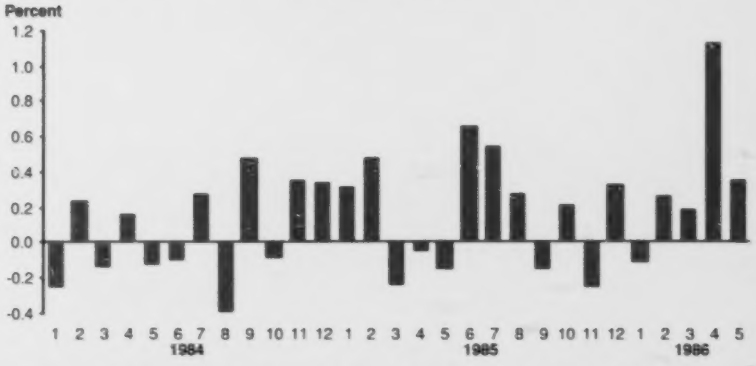
Arizona Leading Index Climbs to Record High

After soaring in April, the Arizona Index of Leading Economic Indicators climbed further in May, the fourth consecutive monthly gain (see Figure I). May's 0.4 percent rise, which followed a huge 1.1 percent jump in April, pushed the index to a record 108.4.

Since 1983, the index has climbed for four consecutive months only one other time, during the winter of 1984-85. The cumulative gain during the last four months was the greatest since the initial recovery from the 1981-82 recession.

A large gain such as that recorded in April is typically registered only at the end of a recession. The only other increases of this magnitude occurred in August 1970, at the end of the 1969-70 recession; in March and May 1975, at the end of the 1974-75 recession; in July 1980, at the end of the 1980 recession; and in January and February 1983, at the end of the 1981-82 recession.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS
MONTHLY CHANGE



Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution[+]			
	Jan.	*Feb.*	*Mar.*	*Apr.*
Delivery Time*.	-.08	.03	.02	.01
Inventory Levels*.	-.05	.09	.01	-.04
New Orders*.	-.07	.06	-.04	-.04
Production*.	-.06	-.03	-.02	.04
Employment*.	-.04	-.03	-.01	.05
Residential Building Permits.	-.32	-.29	.01	.33
Unemployment Insurance Claims.	-.23	.16	-.16	.02
Average Workweek, Manufacturing.	-.18	-.02	.00[r]	.18
Money Supply.	-.09	.32	.45[r]	.65
Change in Sensitive Materials Prices.	.01	-.02	-.07	-.03
OVERALL INDEX.	-.11	.26	.19[r]	1.17

[r]Revised

[+]The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Center for Business Research, College of Business, Arizona State University.

COMPONENTS

The diffusion index – the percentage of rising components – registered a solid 70 percent in April and 60 percent in May, the strongest consecutive months since late 1983. However, only two components – national money supply (M2) and residential building permits – accounted for nearly all of the index's increase during the two months.

April's money supply surge was the third largest ever, exceeded only in January and February 1983. Sizable increases both preceded and followed the April jump, in February, March and May (see Table I). Residential building permits soared in April, a reaction to the late February decline in mortgage interest rates. Similar building permit advances occurred in July 1985 and January 1986, each following periods of falling interest rates.

None of the other components experienced much of a net change in April and May. Average hours worked in the manufacturing industry rose moderately in April but lost most of that advance in May. The five components derived from a survey of Arizona purchasing managers fell in May, following a slight gain in April. Inventory levels declined in both months; production dropped sharply in May, following an advance in April.

OUTLOOK

Prompted by lower interest rates and deflation, the index has advanced during the last four months, indicating that a pickup in business activity is likely by late summer or early fall. The chance of a recession beginning before early1987 is virtually nil.

Nationally, the leading index continued to gain, but the increase in May was smaller than those of the prior few months. So much of the index's strength has been related to the stock market and the money supply that growth in the national economy is unlikely to accelerate as much as indicated.

– Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	47.443	2.7	7.9	NA	NA
Arizona - 1982 Dollars	4th Qtr.	43.707	-0.2	5.2	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	2nd Qtr.	192.6	0.5	0.9	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	May	108.4	0.4	3.4	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	April	383,118	-3	1	1,431,457	1
Pima County	April	86,662	28	20	301,753	10
Balance of State	April	52,498	0	-32	201,349	-8
Arizona	April	522,278	0	0	1,934,559	1
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	April	5,371	20	26	17,221	-13
Pima County	April	1,222	67	2	3,639	-25
Balance of State	April	948	-33	-53	4,249	-27
Arizona	April	7,541	14	0	25,109	-18
HOME SALES						
Maricopa County - Number	May	4,151	-13	-1	21,901	5
Maricopa County - Median Price	May	76,600	0.8	6.4	75,650	5.4
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	1st Qtr.	89	11.3	14.1	NA	NA
Metropolitan Phoenix - Resale Homes	1st Qtr.	104	10.6	18.2	NA	NA
MORTGAGE INTEREST RATES						
(Conventional, 30-year, Fixed-rate)						
Maricopa County	June	10.6	6.0	-10.9	NA	NA
POPULATION ESTIMATES						
(In Thousands)						
Maricopa County	1st Qtr.	1,881	1.3	5.1	NA	NA
Arizona	1st Qtr.	3,343	1.5	4.4	NA	NA
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	May	3,002.5	11.8	1.3	13,446.5	0.2

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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